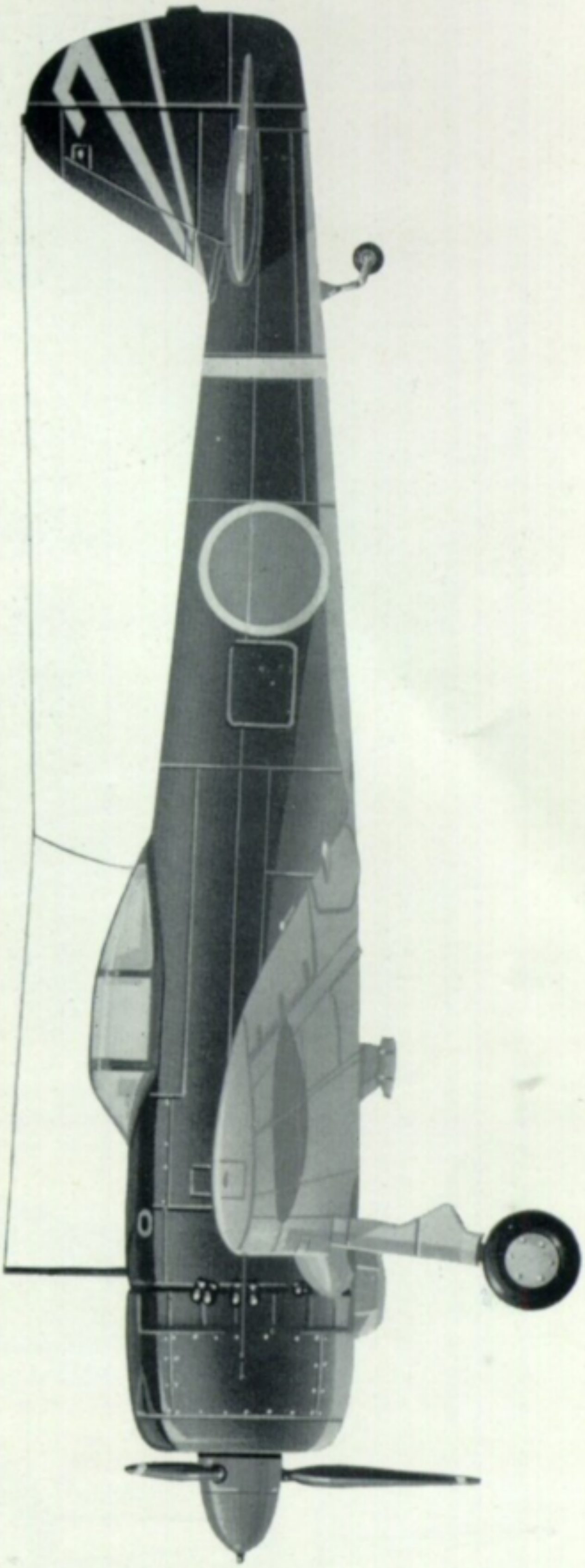
PROFILE
PUBLICATIONS

The Nakajima Ki-43 Hayabusa



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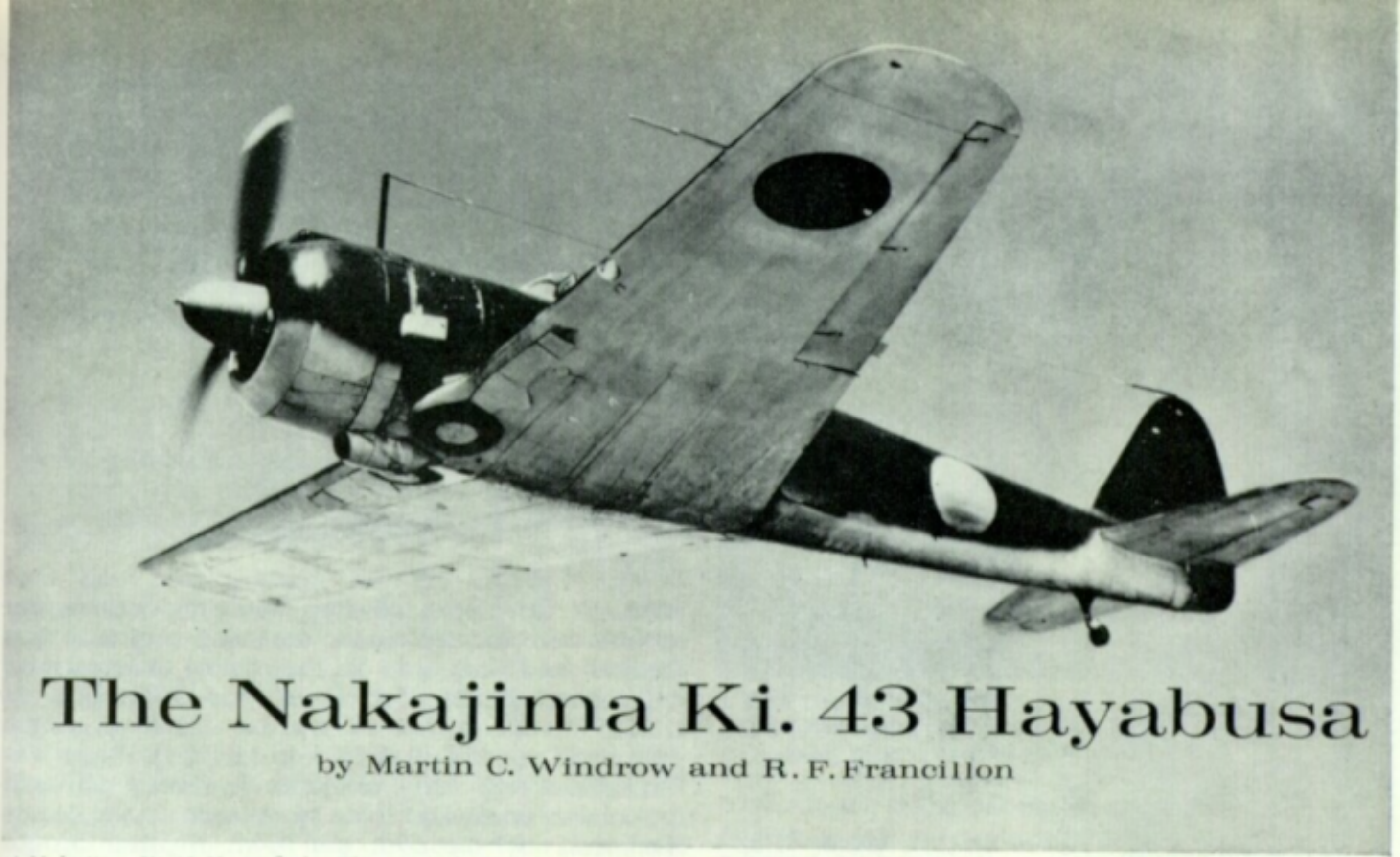


The Nakajima Ki. 43 Hayabusa

by Martin C. Windrow and R. F. Francillon

A Nakajima Ki-43-IIa in flight. This aircraft is an early production model, with oil cooler incorporated in the intake under the cowling. (Photo: via R. J. Francillon)

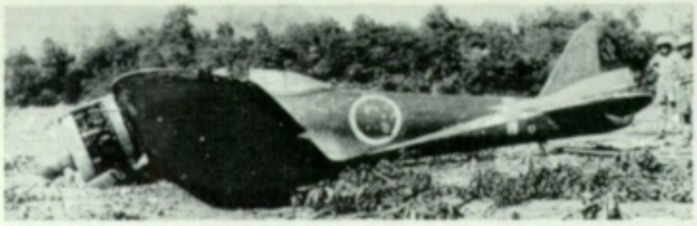
In April 1942 the armed forces of Imperial Japan were riding a wave of victory. Surprised, out-gunned, out-manœuvred, and vastly out-numbered, the Allied garrisons throughout the eastern land mass of S.E. Asia and the Indonesian archipelago were falling one by one in a series of bitter, unrecorded last stands. The largely inaccurate image of the Japanese soldier as a superman was beginning to seem unpleasantly substantial, and his victories were ensured by the complete air superiority gained in a matter of weeks by the air forces of the Imperial Army and Navy. The Navy had in the Mitsubishi Zero-Sen a fighter aircraft which captured the fearful imagination of half the world; but the name of the Zero's Army stablemate is even to this day virtually unknown outside specialist aviation circles. The Nakajima Hayabusa Type I fighter was an aircraft of great significance, bridging as it did the gap between two generations of fighting aeroplanes. In continuous production in one or other of its variant forms for six and a half years, it saw the Sun of Japan rise over China and Malaya and ended its career as a suicide aircraft as that sun finally set over the ravaged Home Islands.

In December 1937 the Japanese Army Air Force granted to the Nakajima Hikoki K.K., one of the most prominent of the nation's aircraft manufacturers, a development contract for a single-seat fighter designated Ki-43 to replace their own Type 97 Ki-27 fixed-undercarriage monoplane. The placing of this contract directly with a specific manufacturer was a precedent which indicated the Army Air Force's satisfaction with the Ki-27, the first truly indigenous Japanese design to achieve performance parity with leading foreign contemporaries. Encouraged by the success of this design the J.A.A.F. by-passed the usual process of comparative trials and awarded to Nakajima the contract for an even more competitive machine. The specification called for an interceptor/escort fighter with a top speed of at least 500 km/h. (311 m.p.h.); a climb rate of 5 minutes to 5,000 m. (16,405 ft.); a range of 800 km. (500 miles); armament comprising two 7·7 mm. machine guns; and manœuvrability at least equal to that of the Ki-27.

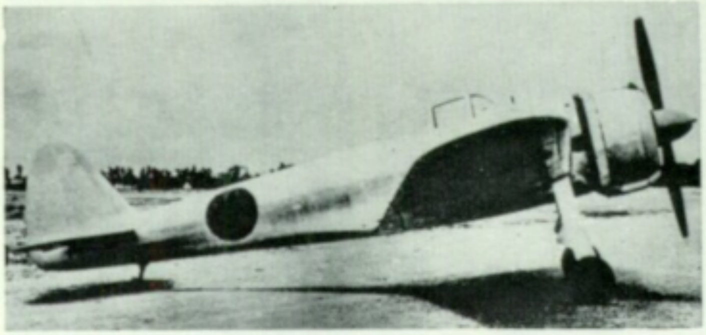
The task undertaken by designer Hideo Itokawa was one of extreme difficulty. Each provision of the specification could be met, it seemed, only at the expense of one of the other requirements. The aircraft which emerged was a compromise and initially displayed all the weaknesses of a compromise. The powerplant was to be the new 950-h.p. two row fourteen cylinder radial Ha-25, the Nakajima-built counterpart of the famous *Sakae* (Prosperity) engine of the Mitsubishi A6M series. The Ki-43 design was the end product of a vigorous policy of weight- and drag-reduction, the former requirement aided by the fact that the original specification did not call for pilot or fuel cell protection, and finally emerged as an extremely slim, clean low-wing cantilever monoplane of all-metal construction. To minimise loadings the one-piece three-spar wing had substantial area, and an innovation in Army fighter design was represented by the fully retractable main undercarriage.

THE FIRST HAYABUSAS

The first prototype, *No. 4301*, was completed at Nakajima's Ota plant in the Gumma Prefecture on 12th December 1938, and flew for the first time early the following month from Ojima Airfield, Ota. *Nos. 4302* and *4303* were completed in February and March 1939 respectively and the three machines were handed over to J.A.A.F. test pilots after a brief programme of manufacturer's trials. These aircraft, painted light grey-green overall, were characterised by the lack of engine cowling gills, the metal panels in the rear of the cockpit hood, and the cockpit-mounted radio antenna mast. The reaction of service test pilots was unfavourable at this stage. To flyers accustomed to the extreme agility of the light fighters of the 1930s, the Ki-43 was sluggish and unresponsive;



A Ki-43-I of the 50th Fighter Sentai's 2nd Chutai, brought down almost intact near Chittagong in 1942. (Photo: Imperial War Museum)



The Ki-43-Ic, first version to standardise the armament at two 12·7 mm. Type I machine guns, and major production variant of the Ki-43-I series.

and the Army pilots, to whom the skilful performance of the classic dog-fighting manœuvres was an article of faith bred into them from their earliest training days, were sceptical of the new design. Many were suspicious of the new features such as the enclosed cockpit and retractable landing gear and some felt that the weight of the retraction mechanism was an uneconomical luxury. It should be stated at this point, however, that at no time was any Ki-43 prototype fitted with a fixed, spatted undercarriage. This erroneous report appears to have been founded on wartime sources confusing the Ki-27 with the Ki-43; previously published drawings of the mythical fixed-undercarriage Hayabusa show landing gear members identical to those of the former aircraft. This point has now been verified by the recent translation of original Japanese documents.

Between November 1939 and September 1940 ten pre-production Ki-43-KAI machines were completed for service trials, numbered *4304* to *4313*. These differed in the following respects:

4304, 4306 to 4309 inclusive. Powered by Nakajima Ha-25 with single-speed supercharger driving a fixed-pitch two-blade wooden propeller. A new all-round-vision canopy was fitted and armament comprised two Type 89 7·7 mm. machine guns. Painted light grey-green overall.

4305. Identical to above except for the installation of an experimental Ha-105 engine with two-speed supercharger.

4310. Identical to *4309* except for an armament of two Ho-103 12·7 mm. machine guns.

4311. Basically similar to *4309*, but employed to test the new "butterfly" combat flaps. Probably the greatest single contribution to the Ki-43s success, these flaps could be extended in action with the result of increased control sensitivity, greater lift, and much tighter turning circle.

4312. An unpainted aircraft with alclad treated duralumin outer skin; cowling gills; radio mast on forward starboard fuselage side.

4313. Alclad duralumin outer skin; cowling gills; two Ho-103 12·7 mm. machine guns; "butterfly" flaps; smaller fuselage diameter and re-designed tail surfaces and wings similar to those adopted on the production aircraft. Powered by Ha-105 engine with two-speed supercharger; radio mast on forward starboard fuselage side.

EARLY PRODUCTION

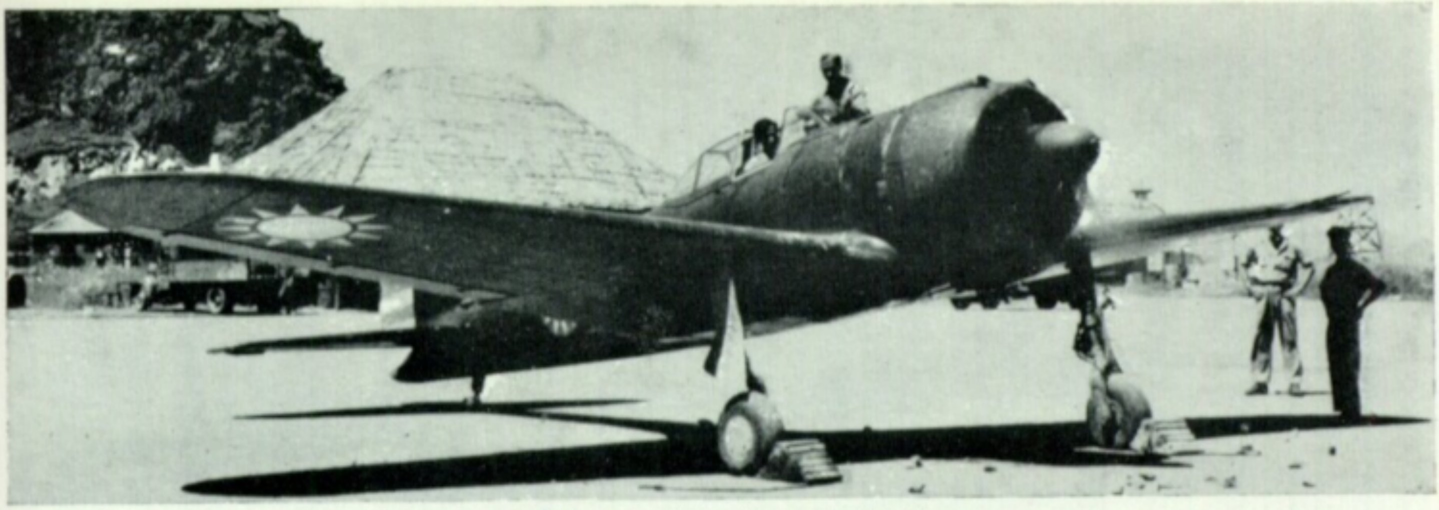
The new combat flaps made an extremely favourable impression on service pilots and earlier scepticism turned to enthusiasm. The initial production variant commenced construction at Ota in April 1941, and christened Hayabusa (Peregrine Falcon) the Ki-43-Ia began to reach fighter units some six months later. The Model Ia was similar in airframe to the pre-production machine *4313*; it was powered by an Ha-25 Type 99 engine rated at 980 h.p. for take-off, with a single-speed supercharger and driving a fixed-pitch two-blade wooden propeller on early production models and later a variable-pitch two-blade metal propeller.

Two Type 89 7·7 mm. machine guns were fired through the upper cowling, and two attachment points were located under the wing centre section behind and inboard of the main undercarriage attachment points. Top speed was 308 m.p.h. at 13,125 ft. and service ceiling was 38,500 ft. Climb rate was 5 minutes 30 seconds to 16,405 ft. When War broke out only forty machines had been delivered to combat units, and these were taken to the Malay Peninsula by the 59th and 64th Fighter Groups (see paragraphs on J.A.A.F. unit structure on p. 10 of this *Profile*).

Their first combat missions were escort sorties with Army Type 97 (Mitsubishi Ki-21) bombers attacking Hong Kong and strategic targets in Burma during the initial Japanese operations to isolate China. First interceptions by Allied aircraft were recorded by the American Volunteer Group's P-40 pilots and by the personnel of No. 67 (Fighter) Squadron, Royal Air Force, at that time equipped with Brewster Buffaloes. The 64th Group, led by Lt.-Col. Tateo Kato, became one of the most famous Japanese units to operate in South East Asia.

The Ki-43-Ia was soon supplanted on production lines by the -Ib variant, in which one of the 7·7 mm.

Model 1A Hayabusas in flight. (Photo: via R. J. Francillon)



A Ki-43-I in Chinese Nationalist hands.

weapons was replaced by a Type I Ho-103 12·7 mm. machine gun. The first mass-production variant was the Ki-43-Ic with two 12·7 mm. guns and capacity for two underwing 33 or 66 lb. bombs or two 44 Imp. gal. drop tanks.

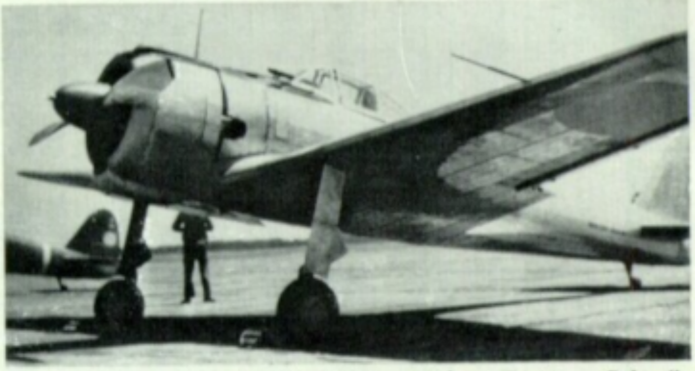
Quickly replacing the Ki-27 as the standard first-line fighter of the J.A.A.F., the Hayabusa soon proved itself in action and became popular with Army pilots, many of whom gained their first taste of combat while flying the type. Admittedly their opponents in those early months were out-numbered, demoralised and generally equipped with obsolete machines, but there is no denying the effectiveness of the slim warplane which burst without warning on the British, Dutch, American and Chinese pilots in the grim months of Spring and Summer 1942.

THE Ki-43-II AND -III

In February 1942 the first of five prototypes of a new variant was completed. Designated Ki-43-IIa, the improved model entered production in the following autumn. From this time on production of the Model I was gradually run down, aircraft of this type being assigned to second-line duties at training establishments and a batch being supplied to the puppet "Royal Thai Air Force". (It is perhaps ironic to Western eyes that Hayabusas in service with this formation bore the insignia of the White Elephant.) The most obvious differences between the Ki-43-IIa and earlier sub-types included the improved Type 2 Ha-115 powerplant, rated at 1,130 h.p. for take-off, with a two-speed supercharger and driving a three-blade fixed-pitch metal propeller. The supercharger air intake was moved from under the cowling to its upper lip; other minor changes included the heightening of the windscreen and canopy, the fitting of a new reflector gunsight, and the strengthening of the wing attachment points to carry 250 kg. (551 lb.) of bombs. The omission of pilot armour and fuel protection in earlier models was now recognised to have been a mistake; 13 mm. head and back plates were fitted in the cockpit and self-sealing tanks were installed in the wings. The wing span was reduced by 60 cm. and wing area by ·6 sq. m.; this modification was not, as has been stated elsewhere, peculiar to the Ki-43-II KAI (Ki-43IIc) variant. Surprisingly, the armament remained standard at two Type I 12·7 mm. machine guns with 250 r.p.g., a battery decidedly inferior to contemporary Allied designs and one of the weakest points of the "Oscar", as the Hayabusa was known in Allied recognition-code parlance.

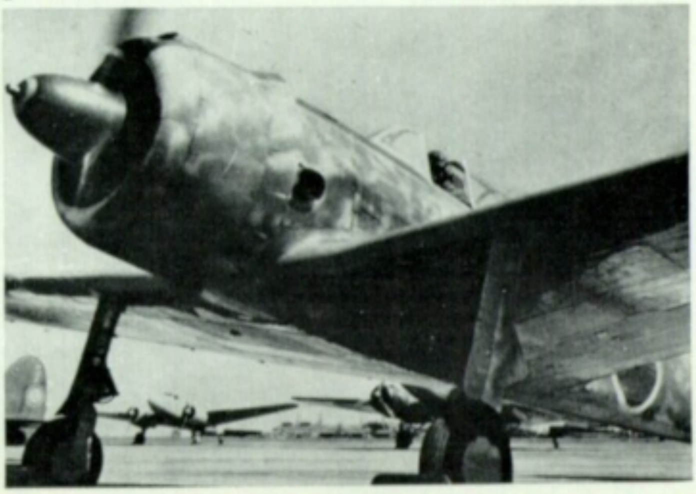
(Two code names were in fact allotted to the Ki-43. "Jim" was assigned by personnel in the China-Burma-India Theatre to a "Type I retractable gear fighter" thought to be a derivative of "Nate", the Nakajima Ki-27. The name "Oscar" was selected by Captain, later Col. Frank T. McCoy, Jr., U.S.A.A.F., and his staff, founders of the code-name system. A native of Tennessee, McCoy tended to select "hill-billy" names such as "Zeke", "Rufe", and "Nate"—short, simple, but unusual enough to stick in the memory.)

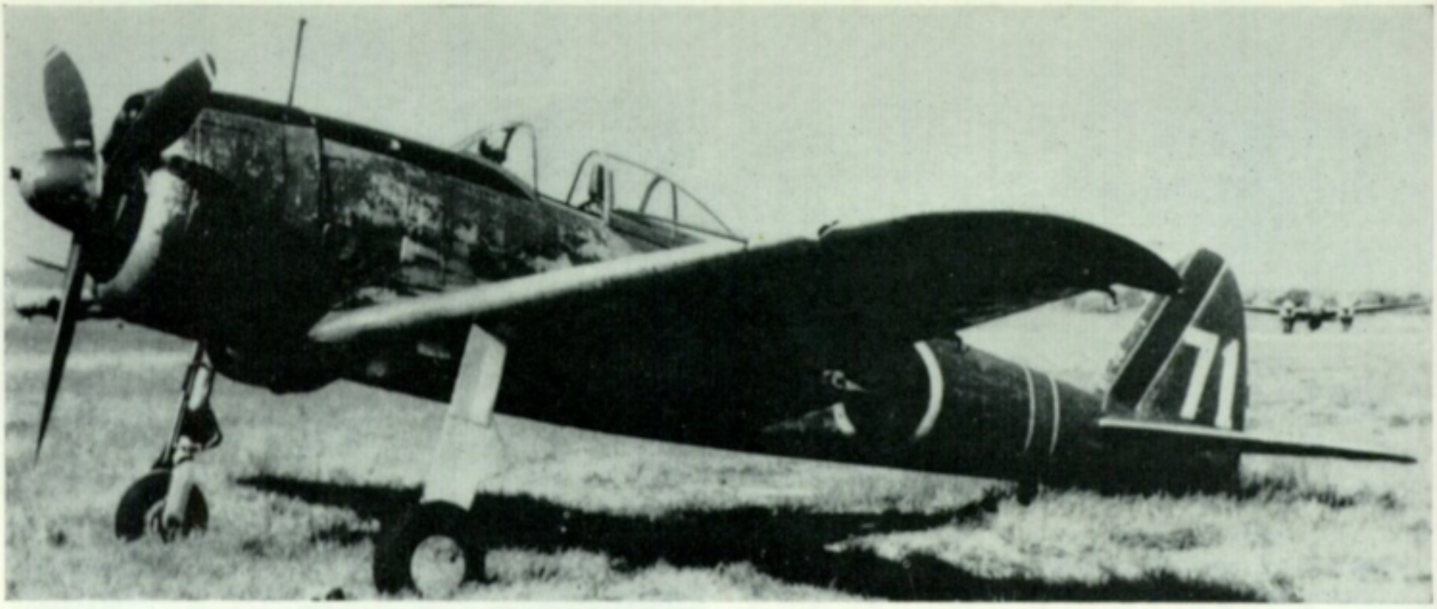
The mass production version of the Type I Model 2 was the Ki-43-IIb. Identical to the -IIa apart from minor equipment changes, the -IIb featured a deeper carburettor intake under the cowling incorporating a "honey-comb" oil cooler. Late production models



Close-up view of one of the Akeno Fighter Training School's Model 1B Hayabusas. Note airscrew decoration, fin emblem (see illustration on page 11 of this Profile*) and early gunsight.*
(Photo: via R. J. Francillon)

A Ki-43-IIa being run up at Akeno. This machine displays to advantage the yellow strip carried on the wing leading edges of J.A.A.F. aircraft, indicated here by its appearance on the landing gear strut cover. (Photo: via Witold Liss)





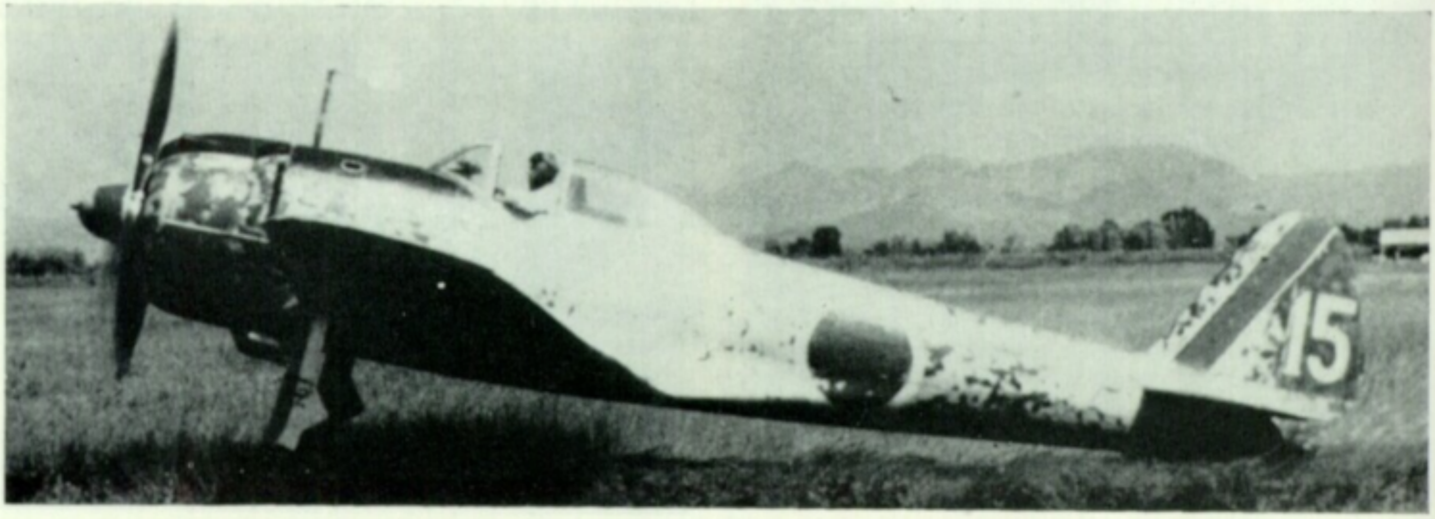
had the oil cooler moved back to a position under the centre of the fuselage. Three prototypes of the Ki-43-II KAI were built between June and August 1942 and this version entered service in the summer of 1943. Further minor equipment changes were incorporated with an eye to ease of production and maintenance, but the main difference was the replacement of the exhaust collector ring by individual exhaust stacks which offered some measure of thrust augmentation. This variant, also known as the Ki-43-IIc (although this may be a "retrospective" designation introduced for clarity by Western sources) saw the wing attachment points moved outboard of the landing gear.

Development of the design continued until the end of the War despite the marked superiority displayed by the Allied types against which the Ki-43 was increasingly being committed. An improved sub-type designated Ki-43-IIIa appeared in May, 1944; powered by an Ha-115-II engine rated at 1,230 h.p. at 9,185 ft., the new version was similar in airframe and armament to the Ki-43-II KAI. It was manufactured mainly by Tachikawa (see production tables) and assigned principally to home defence units based around Tokyo and other large cities in the Home Islands, although the 13th Fighter Group is known to have flown the type in the final months of the War in Singapore and French Indo-China. It was also employed by *Taiatari* elements, the J.A.A.F. counterpart of the J.N.A.F.s *Kamikaze* suicide corps. The final development of the Hayabusa was the Ki-43-IIIb, a version of which only two prototypes had been completed before the Superfortress *Enola Gay* opened the last brief chapter of the Pacific war. Developed by Tachikawa, the -IIIb featured extensive modification of wing and fuselage structure and mounted two Ho-5 20 mm. cannon. This version was intended as a B-29 interceptor and was powered by a 1,250 h.p. Mitsubishi Ha-32/42 engine.

OPERATIONAL ASSESSMENT

The Japanese Army's Peregrine Falcon cannot be judged an outstanding machine by Western standards, but as the most extensively produced J.A.A.F. aircraft of the War it deserves recognition for the important place it occupied in the Imperial arsenal. When a complete aircraft was assembled at Brisbane, Australia, from components of several "write-offs" salvaged from Lae, New Guinea, in the autumn of 1943, Allied pilots who test-flew it were generous in their praise of the Hayabusas control response and manœuvrability. Take-off and landing characteristics were docile, and acceleration between 150 m.p.h. and 250 m.p.h. was extremely brisk. It could be "stunted" with complete safety at speeds of around 160 m.p.h./170 m.p.h., and turn and stall qualities were superior to those of any Allied fighter. It was a pilot's aeroplane, with no built-in vices. On the other side of the coin, it was hopelessly under-gunned,

Above and below: *Two Ki-43-IIa's of the 2nd Chutai, 25th Fighter Sentai. This unit was active in China during 1944 and the first three months of 1945.*



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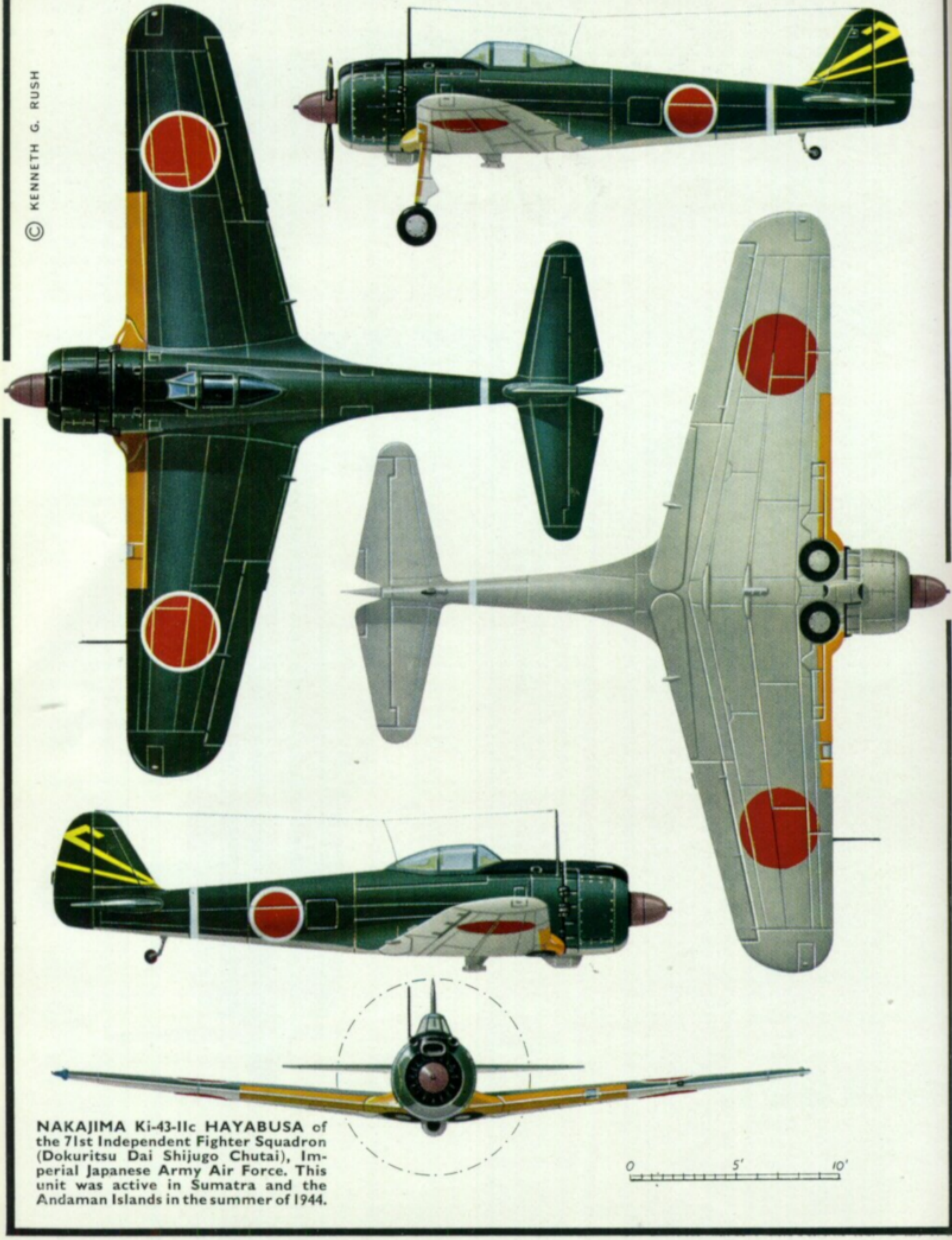
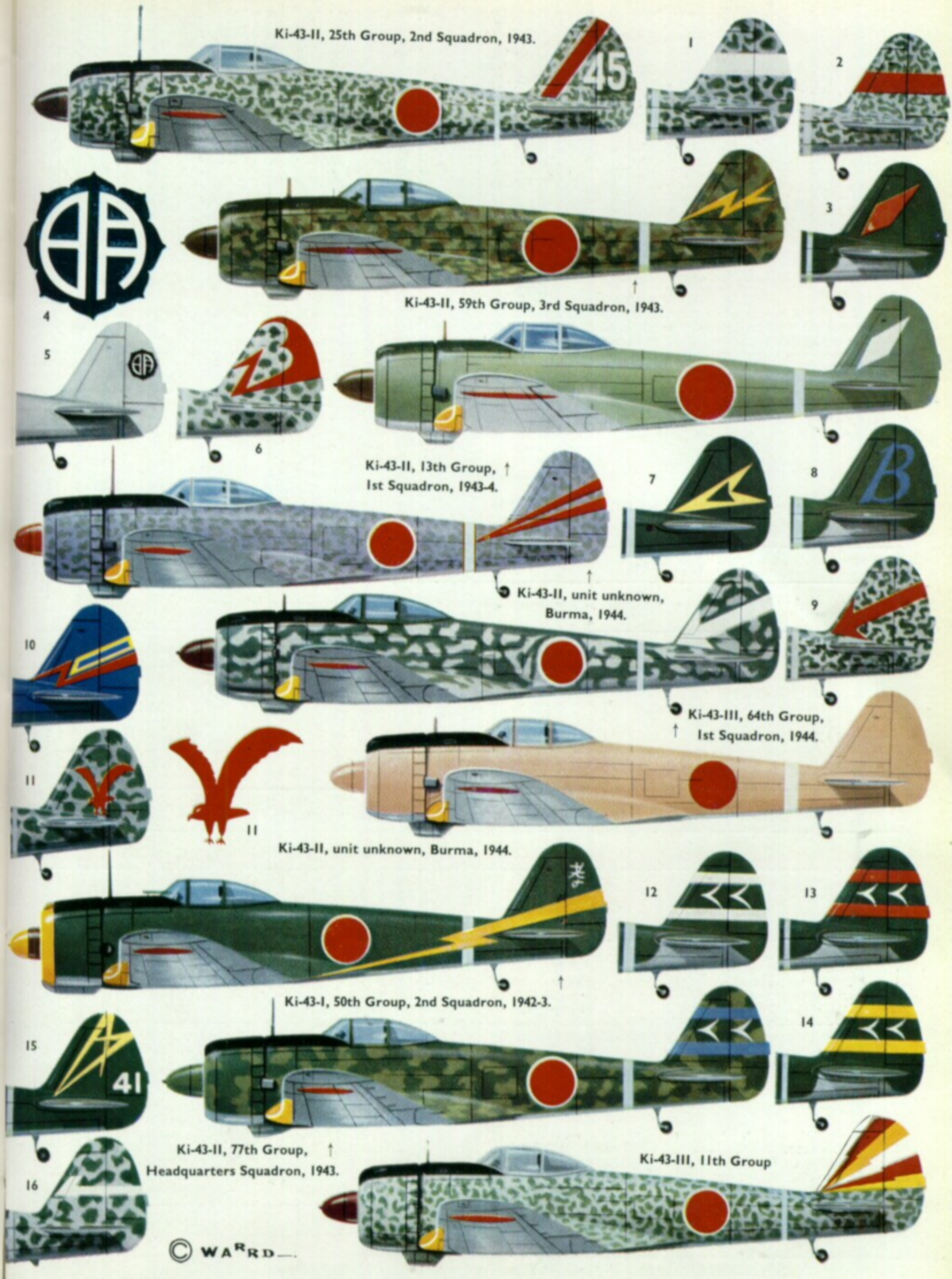


NAKAJIMA Ki-43-IIc HAYABUSA of the 71st Independent Fighter Squadron (Dokuritsu Dai Shijugo Chutai), Imperial Japanese Army Air Force. This unit was active in Sumatra and the Andaman Islands in the summer of 1944.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Ki-43-II, 25th Group, 2nd Squadron, 1943.

Ki-43-II, 59th Group, 3rd Squadron, 1943.

Ki-43-II, 13th Group, 1st Squadron, 1943-4.

Ki-43-II, unit unknown, Burma, 1944.

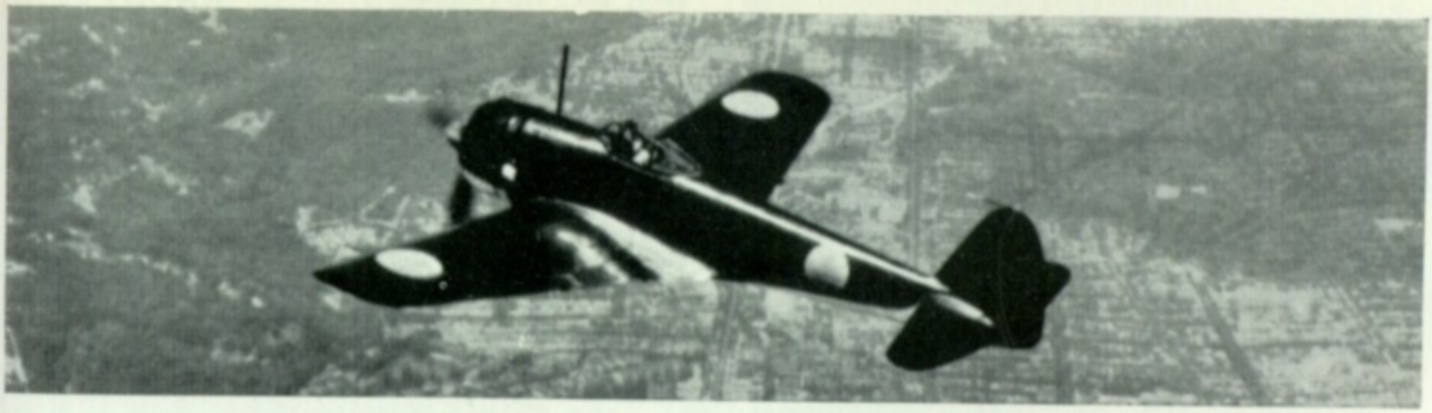
Ki-43-III, 64th Group, 1st Squadron, 1944.

Ki-43-II, unit unknown, Burma, 1944.

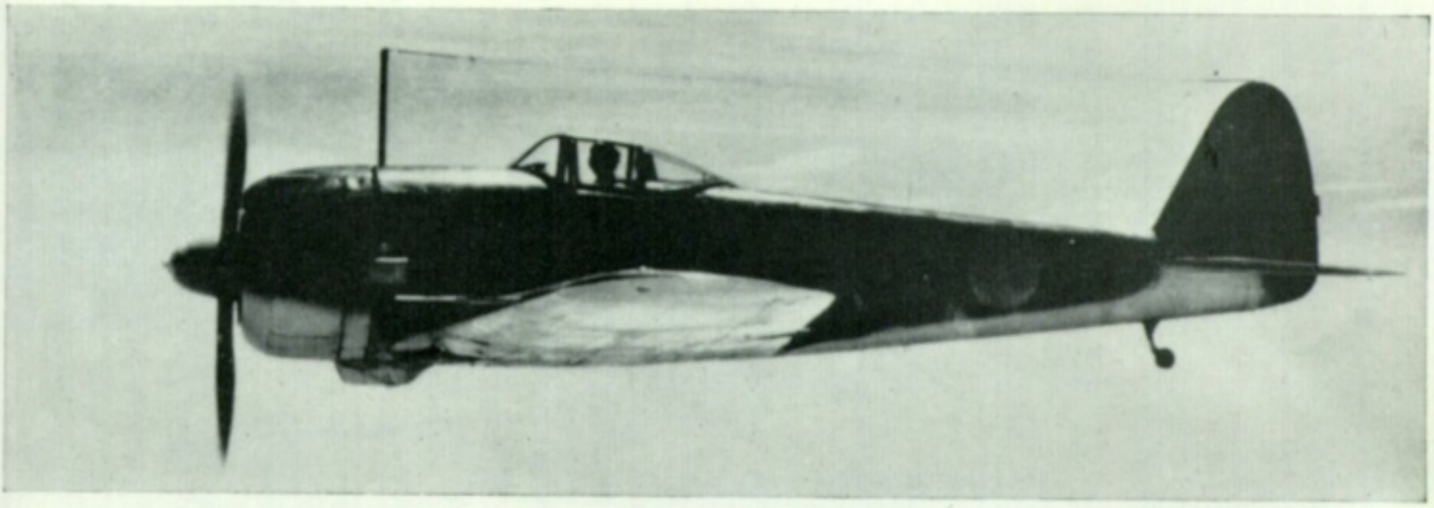
Ki-43-I, 50th Group, 2nd Squadron, 1942-3.

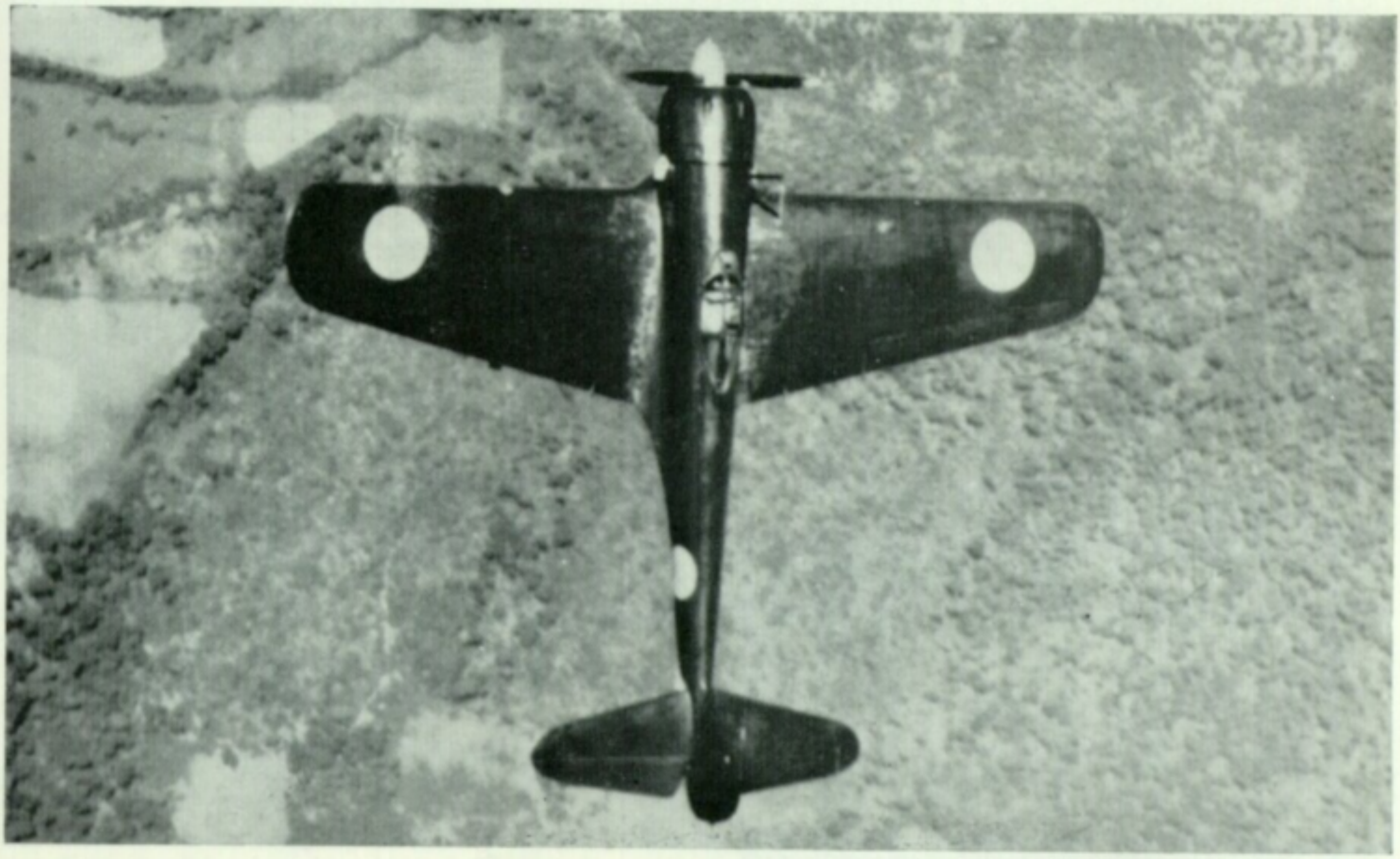
Ki-43-II, 77th Group, Headquarters Squadron, 1943.

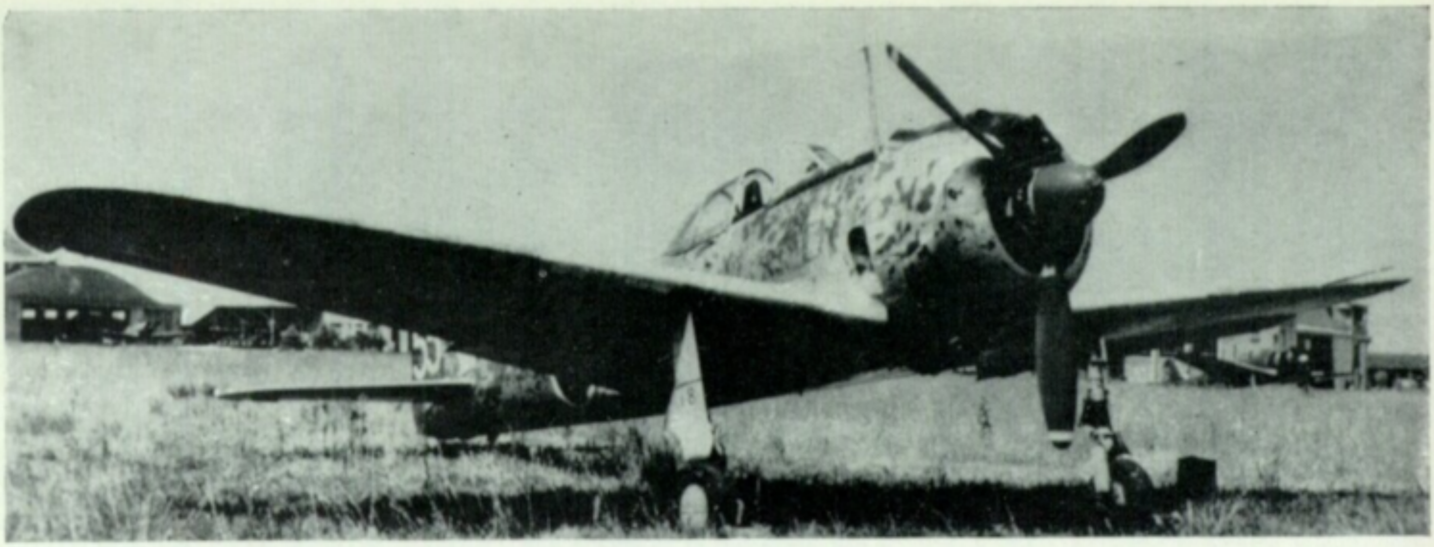
Ki-43-III, 11th Group



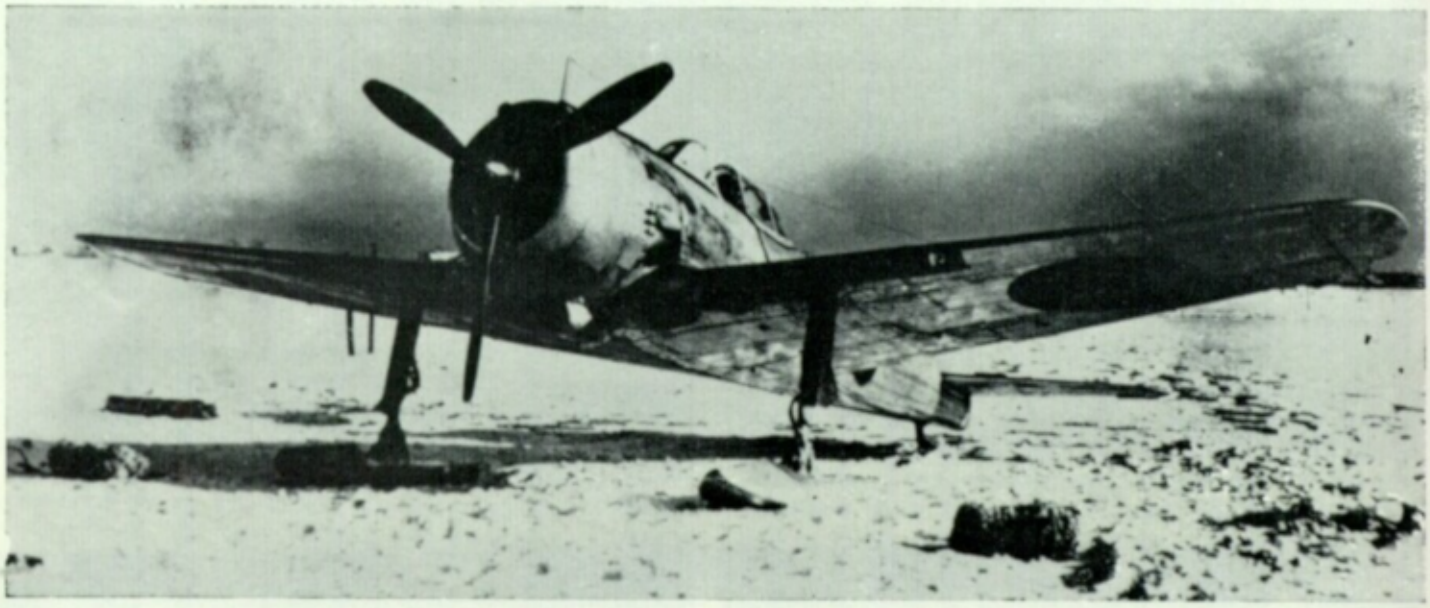
These flying studies of a Ki-43-II show to advantage the extreme slimness of the fuselage and general cleanliness of line which characterised the Hayabusa at all stages of its development. The streamlined, low-drag contours and light wing loadings combined with control sensitivity to make the Hayabusa a fighter pilot's delight from the point of view of manœuvrability; this was a prime consideration in Japanese aviation circles early in the war. The aircraft illustrated appears in these photographs to be finished in the night-fighter scheme of black and natural metal; but examination of the shade of the national insignia as reproduced here indicates that this effect may be simply the result of under-exposure of the original film.





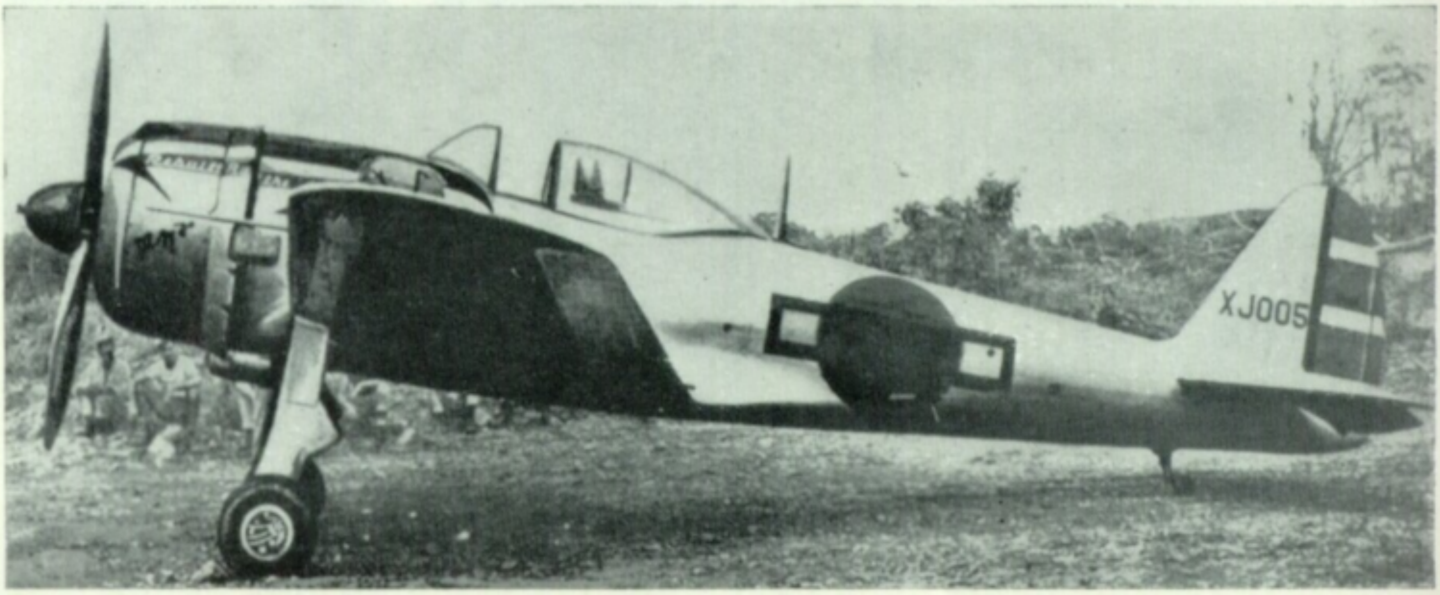


The Model 2A appeared in the autumn of 1942. Among major innovations introduced with this version were reduced wing-span, armour protection for the pilot and self-sealing fuel tanks.



An unusual modification of the Ki-43-II KAI: a ski main undercarriage fitted for testing in Manchuria. Main gear legs were presumably locked down although this machine retains open wheel wells.

A Ki-43-IIa captured by United States forces. The marking style is of especial interest: note that the "bars" of the U.S. insignia have been added to the Japanese Hinomaro on the fuselage.



UNITS KNOWN TO HAVE OPERATED THE Ki-43 INCLUDE THE FOLLOWING:

Sentai	Period of Operations	Area of Operations
1st	1942–44	—
11th	1942?	Dutch East Indies
13th	August 1943–November 1944	New Guinea, Dutch East Indies (Ki-43-I and II)
	November 1944–February 1945	Singapore, French Indo-China (Ki-43-III)
17th	1942–43?	—
18th	1942–43?	—
19th	1942–43?	—
20th	December 1943–February 1945	Japan, Formosa
21st	1942	—
23rd	October 1944–August 1945	Japan
24th	March 1942–44	Dutch East Indies, New Guinea, Japan, Philippines, China
25th	1944–March 1945	China
26th	1942–August 1945	Manchuria, Philippines, Sumatra, New Guinea, Formosa
30th	June 1943–May 1945	—
31st	1942–45	—
33rd	1942–June 1945	China, French Indo-China, Dutch East Indies, New Guinea, Philippines, Sumatra
48th	Spring 1945–August 1945	China
50th	1942–44	China, Thailand Burma
54th	January 1943–August 1945	Japan, China, Formosa
59th	Summer 1941–43	Japan, China, Formosa, Burma, Malaya
63rd	1943–April 1944	Japan, New Guinea
64th	Summer 1941–August 1945	Japan, China, French Indo-China, Thailand, Malaya, Sumatra, Java, Burma
65th	1945	Japan?
71st	June 1944–45	—
72nd	May 1944–May 1945	—
73rd	June 1944–May 1945	—
77th	June 1943–April 1944	Manchuria, Burma, New Guinea
101st	November 1944–August 1945	—
102nd	November 1944–July 1945	—
103rd	November 1944–August 1945	—
104th	November 1944–August 1945	—
112th	July–August 1945	Japan
203rd	March 1942–August 1945	—
204th	January 1944–August 1945	Japan, Burma, French Indo-China, Formosa
248th	October 1942–August 1944	Japan

Dokuritsu Dai Shijugo Chutais (Independent or Direct Command Fighter Squadrons) which operated the Ki-43 Hayabusa are known to include:
1st, 2nd, 4th, 5th, 13th, 14th, 17th, 19th and 26th; dates and bases unknown.

Chutai	Date	Area of Operations
24th	March 1944–January 1945	Sumatra, Philippines
47th	—	Japan
71st	May 1944–August 1945	Sumatra, Andaman Islands, French Indo-China, Malaya

The Fighter Training Schools at Akeno and Hitachi also operated the Ki-43.

A wrecked "Oscar" in Burma, 1944. One of the many destroyed during the Imphal-Kohima battles which represented the last serious threat to Allied air superiority over the South East Asian mainland. (Photo: Imperial War Museum)

and often broke up under the heavier fire of less manœuvrable Allied aircraft. It was considerably slower than most British and American types, who could avoid combat at will. Granted a knowledge of the Oscar's weaknesses. Allied pilots could engage it with confidence even in the later marks of the P-40 series; and it was completely outclassed by the P-47, P-51, Spitfire and P-38.

The Hayabusa served on every front to which the Japanese Army Air Force was committed throughout the Pacific War; it fought over China, Malaya, Indonesia, New Guinea, the Philippines, the Home Islands, and the South Pacific islands. It played a considerable part in the Burma campaign of Spring 1944, and many fell to destruction around Thebaw, Kohima and Imphal. It was the loyal workhorse of an air force which shook the world, and as such it deserves more recognition than has been its lot over the past two decades.

With the exception of one squadron operating against the U.S. 14th Air Force in Southern China, the Ki-43s of the Royal Thai Air Force took an active part in the War. Other foreign formations to use the Hayabusa were the Indonesian People's Security Force, a Communist force which operated salvaged machines against the Dutch in 1946; and Groupes de Chasse I/7 and II/7 of the French Air Army, who flew aircraft confiscated on their return to Indo-China against the Communist insurgents in that colony. The career of the Ki-43 in French hands was brief as Spitfire IXs were soon shipped from France to replace them. The only known surviving Ki-43 is a Model 2 (-IIa) at present mounted on a stand at Clark AFB in the Philippines.

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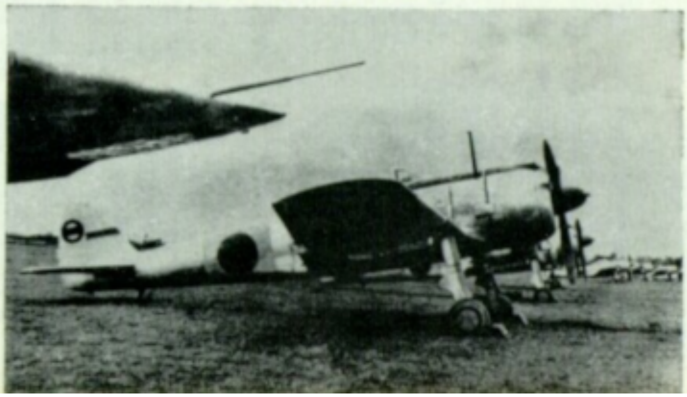
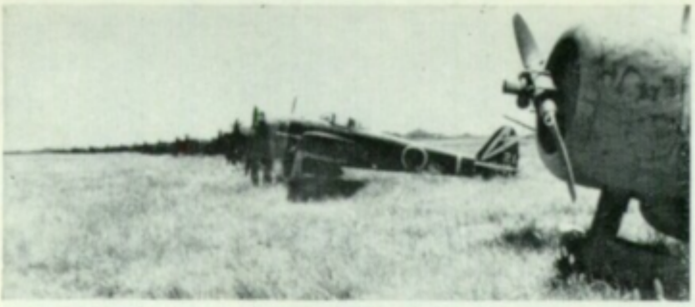
(The publishers wish to acknowledge their gratitude to Mr. d'E. C. Darby of New Zealand and to Aireview Magazine of Tokyo, Japan, for assistance in the preparation of some of the illustrations appearing in this Profile.)

Underwing attachment points are clearly visible on this Ki-43-IIb of the Kumagaya Training School. This establishment's emblem appears on the fin in red.





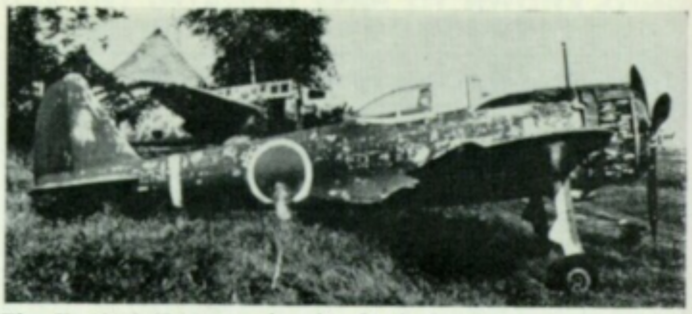
A line-up of the 48th Sentai's Ki-43-IIs in China, Spring 1945.

J.A.A.F. Unit Structure

In the interests of clarity, the terms "Group" and "Squadron" have been used in place of the corresponding J.A.A.F. designations Sentai *and* Chutai. *The Sentai was made up of three Chutais and an H.Q. section or* Sentai Hombu. *Each Chutai was made up of four* Shotais *or Flights of three aircraft. Thus the nominal strength of a* Sentai *was usually 40 aircraft, although some Sentais mustered more than three* Chutais.

Some Chutais were not assigned to Sentais and were known as Dokuritsu Dai Shijugo Chutais *or Independent Squadrons.*

The next unit in the command chain was the Hiko-Dan *or Air Brigade. Two or three fighter Sentais formed a* Sentoki Sentai *or Fighter Air Brigade, but more often a fighter Sentai was assigned to a* Konsei Hiko-Dan *or Mixed Air Brigade, together with a* Keibaku Sentai *(Light Bomber Group) and a* Jubaku Sentai *(Heavy Bomber Group). Two or three* Hiko-Dans *formed the* Hiko-Shidan *(Air Division) and the strategic Air Army or* Koku-Gun *grouped two or three* Hiko-Shidans.



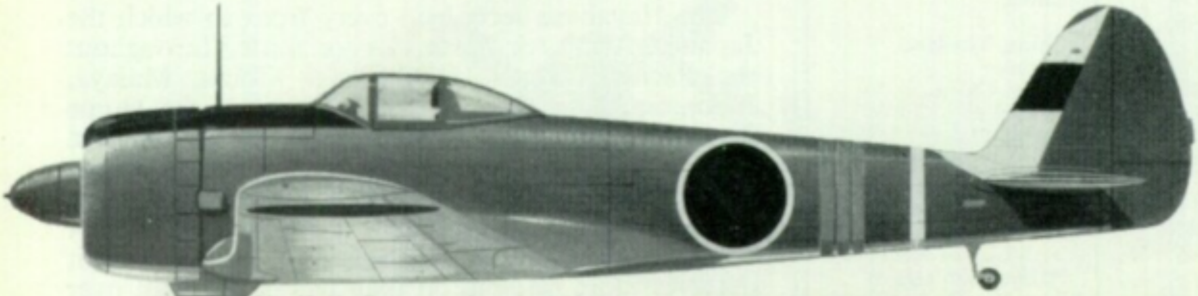
The Ki-43-II KAI introduced individual exhaust stacks, which offered some thrust augmentation over the collector ring system employed on earlier variants.

Key to J.A.A.F. Fin Markings illustrated opposite:

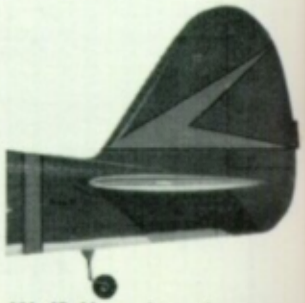
1. 1st Group, 2nd Squadron, 1943.
2. 1st Group, 1st Squadron, 1943.
3. 13th Group, 2nd Squadron, 1943.

4 and 5. Akeno Fighter Training School.

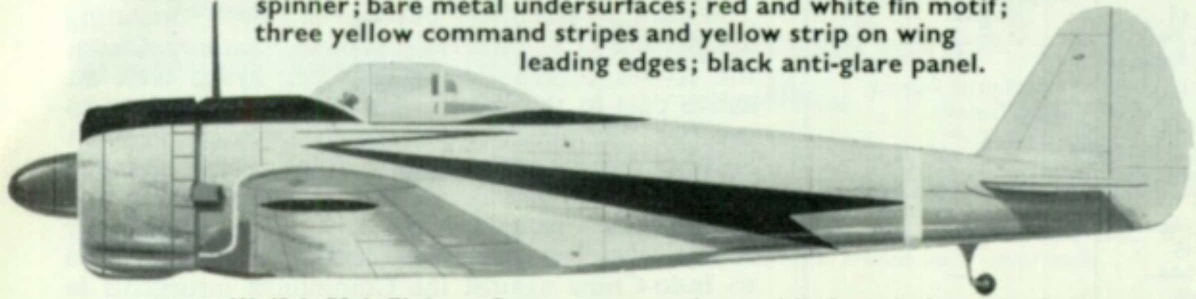
6. 23rd Group, 1944–45.
7. 63rd Group, 3rd Squadron, 1943–44.
8. 13th Group, 1944–45.
9. 64th Group, 1st Squadron, 1944.
10. 20th Group, 1944–45.
11. 24th Independent Squadron, 1944–45.
12. 77th Group, 1st Squadron, 1944.
13. 77th Group, 2nd Squadron.
14. 77th Group, 3rd Squadron.
15. 48th Group, 1945.
16. 77th Group, 1st Squadron, 1943–44.



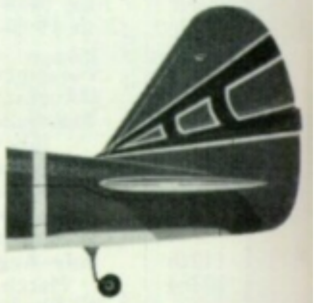
Ki-43-II, Burma (Imphal-Kohima campaign), 1945. Green uppersurfaces and spinner; bare metal undersurfaces; red and white fin motif; three yellow command stripes and yellow strip on wing leading edges; black anti-glare panel.



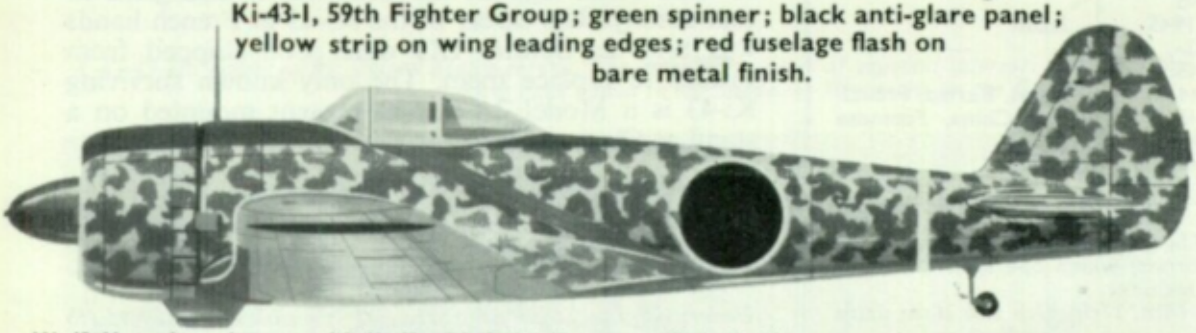
Ki-43-II, unit unknown; yellow fuselage band and fin motif outlined in red.



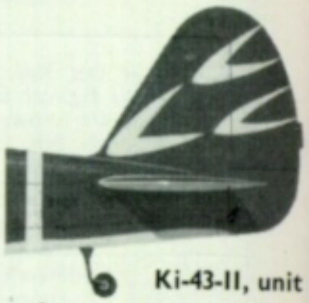
Ki-43-I, 59th Fighter Group; green spinner; black anti-glare panel; yellow strip on wing leading edges; red fuselage flash on bare metal finish.



Ki-43-II, 68th Squadron; red fin motif outlined in white; white fuselage band.

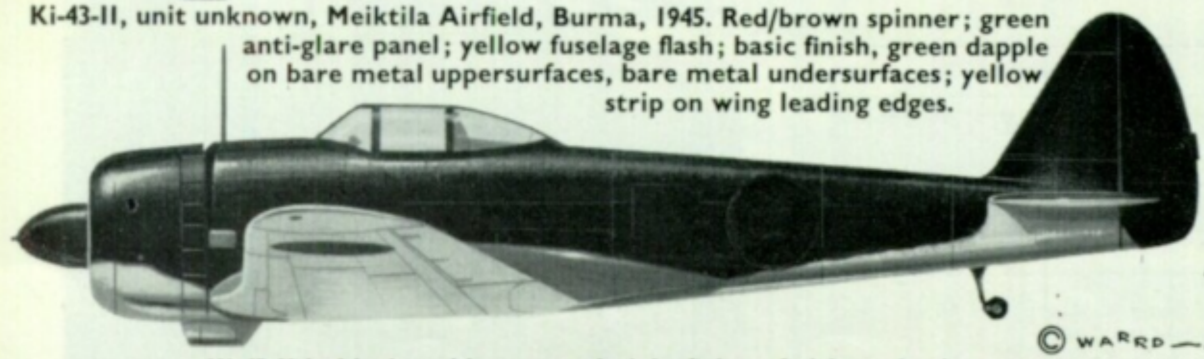


Ki-43-II, unit unknown, Meiktila Airfield, Burma, 1945. Red/brown spinner; green anti-glare panel; yellow fuselage flash; basic finish, green dapple on bare metal uppersurfaces, bare metal undersurfaces; yellow strip on wing leading edges.



Ki-43-II, unit unknown; fin motif *bare metal*; white fuselage band.

Aircraft above based on Alexishafen Airfield, New Guinea, 1945. All three finished in jungle green uppersurfaces, pale blue undersurfaces.



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Ki-43-II in black and bare metal night-fighter finish; red spinner.

Ki-43-IIa's on a Manchurian airfield, 1943. (Photo: via Witold Liss)

Ki-43 PRODUCTION

A total of 5,918 Ki-43s were manufactured between 1938 and 1945 by *Nakajima Hikoki K.K.*, in its main plant at Ota, Gumma Prefecture; at the First Army Air Arsenal (*Tachikawa Dai-ichi Rikugun Kokusho*, or *Rikugun* for short) at Tachikawa, Tokyo Prefecture; and at the plant of *Tachikawa Hikoki K.K.*, also at Tachikawa, Tokyo Prefecture. Production was broken down as follows.

Version	**Nakajima**	**Rikugun**	**Tachikawa**
Ki-43 prototypes ...	3 December 1938–March 1939	—	—
Ki-43 pre-production ...	10 November 1939–September 1940	—	—
Ki-43-I Type I Model I...	716 April 1941–February 1943	—	—
Ki-43-II prototypes ...	5 February–May 1942	—	—
Ki-43-II pre-production	3 June–August 1942	—	—
Ki-43-II Type I Model 2	2,942 November 1942–September 1944	49 October 1942–November 1943	2,629 April 1943–August 1945
Ki-43-IIIa Type I Model 3	10 May 1944–August 1945	—	
Ki-43-IIIb	—	—	2 1945
Totals	**3,238**	**49**	**2,631**

However, only some 5,751 Ki-43s were delivered and accepted by the J.A.A.F. as below:

Fiscal Year	**Nakajima**	**Rikugun**	**Tachikawa**
April 1941–March 1942	273	—	—
April 1942–March 1943	742	—	—
April 1943–March 1944	1,627	22	420
April 1944–March 1945	543		1,840
April 1945–August 1945	—	—	284
Totals	**3,185**	**22**	**2,544**

SPECIFICATIONS

Nakajima Army Type I Fighter "Hayabusa" (Ki-43)

	Ki-43-Ia	**Ki-43-IIa**	**Ki-43-IIIa**
Span	37 ft. $6\frac{3}{16}$ in.	35 ft. $6\frac{11}{16}$ in.	35 ft. $6\frac{11}{16}$ in.
Length	28 ft. $11\frac{3}{4}$ in.	29 ft. $3\frac{3}{16}$ in.	29 ft. $3\frac{3}{16}$ in.
Height	10 ft. $8\frac{3}{4}$ in.	10 ft. $8\frac{3}{4}$ in.	10 ft. $8\frac{3}{4}$ in.
Wing area	237 sq. ft.	228 sq. ft.	228 sq. ft.
Empty weight	3,483 lb.	4,211 lb.	4,233 lb.
Loaded weight... ...	4,515 lb.	5,710 lb.	5,620 lb.
Maximum weight ...	5,695 lb.	6,450 lb.	6,750 lb.
Fuel capacity	124 Imp. gal.+ 2 × 44 Imp. gal.	120 Imp. gal.+ 2 × 44 Imp. gal.	144 Imp. gal.+ 2 × 46 Imp. gal.
Engine	950 h.p. Type 99 (Ha-25)	1,150 h.p. Type 2 (Ha-115)	1,150 h.p. Type 2
Take-off rating	980 h.p.	1,130 h.p.	1,190 h.p.
Maximum rating ...	970 h.p. at 11,155 ft.	1,150 h.p. at 9,185 ft.	1,230 h.p. at 9,185 ft.
Airscrew diameter ...	9 ft. $6\frac{3}{16}$ in.	9 ft. $2\frac{1}{4}$ in.	9 ft. $2\frac{1}{4}$ in..
Maximum speed ...	308 m.p.h. at 13,125 ft. — —	320 m.p.h. at 21,650 ft. 329 m.p.h. at 13,125 ft. 289 m.p.h. at S.L.	358 m.p.h. at 21,920 ft. 312 m.p.h. at 9,190 ft. 301 m.p.h. at S.L.
Cruise speed	199 m.p.h. at 8,200 ft.	273 m.p.h.	275 m.p.h.
Climbing speed ...	5 min. 30 sec. to 16,405 ft	5 min. 49 sec. to 16,405 ft.	5 min. 19 sec. to 16,405 ft.
Service ceiling	38,500 ft.	36,750 ft.	37,400 ft.
Range (normal/max). ...	745 miles/—	1,095 miles/1,990 miles	1,320 miles/1,990 miles
Armament	2 × 7·7 mm. Type 89 2 × 33 lb. 66 lb. bombs	2 × 12·7 mm. Type I 2 × 66 lb. or 551 lb. bombs	2 × 12·7 mm. Type I 2 × 110 lb. or 220 lb. bombs

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